

Game Theory Worksheet

CSCI 364: Artificial Intelligence

December 17, 2021

In class today, we are going to play two short games with each other: (1) Paper-Rock-Scissors and Choose a Restaurant.

Paper-Rock-Scissors

Paper-Rock-Scissors is a classic two-player children's game where each player makes a choice amongst three possible actions: Paper, Rock, or Scissors. The winner is determined by the choices made by the players:

If the choices are Rock and Scissors, then the player who chose **Rock** wins

If the choices are Rock and Paper, then the player who chose **Paper** wins

If the choices are Scissors and Paper, then the player who chose **Scissors** wins

If both players choose the same action, the round is a draw and another round is played

More generally: Rock beats Scissors beats Paper beats Rock.

Please pair up with a neighbor and play Paper-Rock-Scissors until one of you wins. Count down 3, 2, 1, then after the 1 tell the other person your choice of action. Record which action you chose and what action your neighbor chose. Repeat with 3-5 neighbors.

Reflection Question 1: How did you decide which action to choose? Did your decision-making process change from neighbor to neighbor?

Reflection Question 2: What thoughts did you have about how your neighbor would choose actions?

Choose a Restaurant

Once again, find a neighbor to play a game with. Your goal is to try to collectively pick a restaurant to eat at tonight. Each of you should do the following

- 1) Tell your neighbor about your three favorite restaurants in Oberlin in ranked order (e.g., #1 Thini Thai, #2 Kim's Carryout, #3 Feve)
- 2) From your list and your neighbor's list, individually decide on a single restaurant that you want to go eat at tonight.
- 3) Once both people have chosen where to go, share your choice with your neighbor. Do not share until both have individually decided.

Record your list, your neighbor's list, and both of your chosen restaurants below.

Reflection Question 3: How did you decide which restaurant to pick from the combination of both your list and your neighbor's list? What did you consider, and what led to you to make the choice that you did?

Reflection Question 4: Did you both choose the same restaurant? What could you have done differently to make sure that you both chose the same place to eat?